WHAT IS CLAIMED IS:

1. A flexible tube for an endoscope, comprising:

an elongated tubular core body; and

an outer cover which is provided over the core body, the outer cover having a portion which is formed into a laminate structure composed of at least three layers, the layers of the laminate structure including an inner layer, an outer layer and at least one intermediate layer formed between the inner layer and the outer layer, wherein the intermediate layer of the outer cover has a higher elasticity than the inner and outer layers so that the intermediate layer functions as cushioning between the inner layer and the outer layer, wherein at least one of the layers constituting the portion of the laminate structure has a thickness-varying region where the thickness of the layer varies in its longitudinal direction.

2. The flexible tube as claimed in Claim 1, wherein the thickness-varying region extends substantially over an entire region of the layer, and within the thickness-varying region the thickness of the layer varies in its longitudinal direction in a gradual or stepwise manner.

3. The flexible tube as claimed in Claim 1, wherein the layer with the thickness-varying region has at least one uniform thickness region which is formed so as to adjoin the thickness-varying region.

4. The flexible tube as claimed in Claim 1, wherein the layer having the thickness-

varying region is formed of a material that is different from materials constituting the other layers in its hardness.

5. The flexible tube as claimed in Claim 1, wherein each of at least two of the layers constituting the portion of the laminate structure has a thickness-varying region where the thickness of the layer varies in its longitudinal direction.

6. The flexible tube as claimed in Claim 1, wherein the outer cover is provided over the core body through an extrusion molding process.

7. The flexible tube as claimed in Claim 6, wherein in the extrusion molding process a constituent material for each of the layers is fed at a predetermined feeding rate while the core body is fed at a predetermined feeding speed, in which the thickness of the layer having the thickness-varying region is controlled by adjusting the feeding rate of the material for the layer during the extrusion molding process and/or adjusting the feeding speed of the core body during the extrusion molding process.

8. A flexible tube for an endoscope, comprising:

an elongated tubular core body; and

an outer cover which is provided over the core body, the outer cover having a portion which is formed into a laminate structure composed of at least three layers, the layers of the laminate structure including an inner layer, an outer layer and at least one intermediate layer formed between the inner layer and the outer layer, wherein the intermediate layer of the outer cover has a higher elasticity than the inner and outer layers

so that the intermediate layer functions as cushioning between the inner layer and the outer layer, wherein at least one of the layers constituting the portion of the laminate structure has a thickness-varying region where the thickness of the layer varies in its longitudinal direction, wherein at least one of the layers constituting the portion of the laminate structure has at least two regions and at least one boundary part along its longitudinal direction, and one of the regions is contiguous to the other region through the boundary part, in which one of the regions is different from the other regions adjacent thereto in its physical property and/or chemical property.

9. The flexible tube as claimed in Claim 8, wherein one of the regions is formed of a material which is different from that forming the other region adjacent thereto.

10. The flexible tube as claimed in Claim 8, wherein each of at least two of the layers constituting the portion of the laminate structure has at least two regions and at least one boundary part along its longitudinal direction, and one of the regions is contiguous to the other region through the boundary part, in which one of the regions is different from the other region adjacent thereto in its physical property and/or chemical property.

11. The flexible tube as claimed in Claim 10, wherein the outer cover is formed such that the boundary part of one layer is not located above or below the boundary part of the other layer in its thickness direction.

12. The flexible tube as claimed in Claim 8, wherein the boundary part is formed

as a property-varying part within which the physical property and/or the chemical property of the layer gradually vary in its longitudinal direction.

13. The flexible tube as claimed in Claim 12, wherein the boundary part is formed of a mixture of a material constituting one of the regions and a material constituting the other region.

14. The flexible tube as claimed in Claim 8, wherein the layer having the boundary part is formed such that the physical property and/or the chemical property within the boundary part vary in its longitudinal direction in a substantially stepwise manner.

15. The flexible tube as claimed in Claim 8, wherein in the layer having the at least two regions, one of the regions is different from the other region adjacent thereto in its hardness.

16. The flexible tube as claimed in Claim 8, wherein the flexible tube has tip and base ends, and flexibility of the flexible tube increases in a gradual or stepwise manner along the direction from the base end to the tip end.